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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/615,884

07/08/2003

Morteza Gharib

06618-915001

9837

20985 7590 01/23/2007  
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EXAMINER

HOLMES, REX R

ART UNIT

PAPER NUMBER

3762

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/23/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/615,884

Applicant(s)

GHARIB, MORTEZA

Examiner

Rex Holmes

Art Unit

3762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 10-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claim 10-21 have been considered but are moot in view of the new ground(s) of rejection.

### ***Allowable Subject Matter***

2. The indicated allowability of claims 17-21 is withdrawn in view of the newly discovered reference(s) to Seitz et al. (U.S. Pat. 6,149,595 hereinafter "Seitz").  
Rejections based on the newly cited reference(s) follow.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 10-11, 13 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Seitz et al. (U.S. Pat. 6,149,595 hereinafter "Seitz") or, in the alternative, under 35 U.S.C. 103(a) as obvious over Seitz in view of Gharib et al., the 1994 article submitted by the applicant (hereinafter "Gharib").

6. Seitz discloses a non-invasive method utilizing ultrasound scanning to determine cardiac valve function (Col. 41, Table 16). Seitz discloses a method that utilizes time, velocity and valve area to determine valve function which is considered the claimed formation number (Cols. 52). Seitz also discloses that it utilizes existing values determined through traditional methods as a baseline comparison for valve function (Col. 2, ll. 1-12).

In the alternative, Seitz discloses the method of determining cardiac valve function as disclosed above, but Seitz does not call the combination of time, velocity, and valve area a formation number. However, Gharib discloses a formation number created from time, velocity, and valve area to determine the flow process in the left ventricle and the efficiency of the valves (Pages, 34-35). Gharib further teaches a baseline comparison in the figure graphing the results for DCM patients versus normal patients using a formation number would encompass the claimed comparison to a baseline (Pages, 34-35). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method as taught by Seitz, with the formation number as taught by Gharib since it was known in the art that the combination of time, velocity and valve area is used to determine valve function.

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7. Claims 12, 14-15 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seitz or Seitz in view of Gharib as applied above. Although Seitz or Seitz in view of Gharib do not specifically disclose that it determines atrial fibrillation, it would have been obvious to use the Seitz or Seitz in view of Gharib method to determine atrial fibrillation as the dysfunction indicated as Atrial fibrillation is a common arrhythmia that accompanies mitral incompetence. As to the type of imaging used for blood flow studies, merely changing to another known imaging method at the time of the invention, would have been obvious as it is well known in the art that different imaging methods produce interchangeable results.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rex Holmes whose telephone number is 571-272-8827. The examiner can normally be reached on M-F 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on 571-272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Rex Holmes  
Examiner  
Art Unit 3762



George Evanisko  
Primary Examiner  
Art Unit 3762

1/16/7